

5      Claims

I claim:

- 10      1.      A combination box scraper assembly for attaching to a three- point hitch at the rear of a tractor, the assembly further includes a self-guiding hitch system which enables the connection of a variety of tractor implements, the box scraper assembly comprising:
- a frame having two spaced opposing end sides, and a back side extending between the end sides,
- 15           a scarifying/comb attachment having at least one arm, said arm having a first end and a second end opposite the first end, wherein a comb bracket is attached to the second end of the arm, said comb bracket including an aperture,
- a hydraulic lift having a hydraulic ram, wherein an end of the hydraulic lift opposite the hydraulic ram is attached to the frame, and the hydraulic ram is pivotally
- 20      attached to the first end of the arm of the scarifying/comb attachment,
- a horizontal bar disposed within the aperture of the bracket,
- a scarifying member attached to a first side of the horizontal bar, and a comb member attached to a second side of the horizontal bar,
- a rake member positioned forward of said back side between the end sides of
- 25      the box scraper, said rake member attached to a horizontal support member,
- pivot means attached to the rake member for pivoting the rake member, and
- attachment means secured to the horizontal support member for releasably attaching the box scraper to the three- point hitch.
- 30      2.      The box scraper assembly as recited in Claim 1, wherein ends of said rake member is mounted to the horizontal support member with hinges, said rake member is further attached to a horizontal rod disposed between the hinges and the horizontal support member, said horizontal rod disposed between the end sides of the box scraper and parallel with the horizontal support member.

5        3.        The box scraper assembly as recited in Claim 3, wherein the rake member includes a lever attached to the horizontal rod for selectively engaging and disengaging the rake member.

10       4.        The box scraper assembly as recited in Claim 1, wherein the at least one arm of the scarifying/comb attachment is hydraulically positioned in a first position when the attachment is not in use, and a second position when the attachment is in use.

15       5.        The box scraper assembly as recited in Claim 1, further including a self-guiding hitch disposed on the back side of the box scraper, said self-guiding hitch comprising:

15           a pair of upwardly extending arms having upper and lower ends, wherein the lower ends are attached to the support member of the box scraper, and the upper ends upwardly extend from the support member forming an upper bracket for connecting with the tractor's three- point hitch,

20           a pair of extension members that downwardly depend from the support member, wherein each of the extension members include an extension aperture, and        a stop block attached at an angle to the outer surface of the extension members.

25       6.        The box scraper assembly as recited in Claim 1, wherein the tractor implement comprising:

25           a horizontal brace member,  
             first and second brackets attached to the brace member, said first and second brackets each including an inner plate and an outer plate, said inner and outer plates of the first and second brackets having aligned bracket apertures,

30           a first guide plate attached at an angle to an upper end of the inner plate of the first bracket, and a second guide plate attached at an angle to an upper end of the inner plate of the second bracket,

             wherein said guide plates are angled inwardly,

             wherein said first and second brackets sized to releasably receive the extension members of the box scraper, and

5 attachment means for releasably attaching the box scraper to a tractor  
implement.

7. The box scraper assembly as recited in Claim 6, further including connecting  
pins for connecting the extension members to the first and second brackets of the  
10 implement.

8. A combination box scraper assembly for attaching to a three- point hitch at the  
rear of a tractor, the assembly further includes a self-guiding hitch system which  
enables the connection of a variety of tractor implements, the box scraper assembly  
15 comprising:

a frame having two spaced opposing end sides, and a back side extending  
between the end sides,

a tool attachment having at least one arm, said arm having a first end and a  
second end opposite the first end,

20 a hydraulic lift having a hydraulic ram, wherein one end of the hydraulic lift is  
attached to the frame, and the hydraulic ram opposite the one end is pivotally attached  
to the first end of the arm of the tool attachment,

a horizontal bar attached to the second end of the arm,

at least one first tool member attached to a side of the horizontal bar,

25 a rake member positioned forward of said back side between the end sides of  
the box scraper, said rake member attached to a horizontal support member,  
pivot means attached to the rake member for pivoting the rake member.

9. The box scraper assembly as recited in Claim 8, wherein ends of said rake  
30 member is mounted to the horizontal support member with hinges, said rake member is  
further attached to a horizontal rod disposed between the hinges and the horizontal  
support member, said horizontal rod disposed between the end sides of the box  
scraper and parallel with the horizontal support member.

5        10.     The box scraper assembly as recited in Claim 9, wherein the rake member includes a lever attached to the horizontal rod for selectively engaging and disengaging the rake member.

10       11.     The box scraper assembly as recited in Claim 8, wherein the at least one arm of the tool attachment is hydraulically positioned in a first position when the attachment is not in use, and a second position when the attachment is in use.

15       12.     The box scraper assembly as recited in Claim 8, further including a self-guiding hitch disposed on the back side of the box scraper for connecting with the tractor implement, said self-guiding hitch comprising:

             first and second upwardly extending arms having upper and lower ends, wherein the lower ends are attached to the support member of the box scraper, and the upper ends upwardly extend from the support member forming an upper bracket for connecting with the tractor's three- point hitch,

20           a first scraper bracket formed of the lower end of the first extending arm and a first plate attached to the support member parallel with the lower end of the first extending arm, and a second scraper bracket formed of the lower end of the second extending arm and a second plate attached to the support member parallel with the lower end of the second extending arm,

25           a first attachment means for releasably attaching the tractor's three- point hitch to the first and second scraper brackets,

             a first extension member that downwardly depends from the first plate, and a second extension member that downwardly depends from the second plate, wherein each of the extension members include an extension aperture, and

30           a stop block attached at an angle to the outer surface of the extension members.

13.     The box scraper assembly as recited in Claim 8, further including a tractor implement comprising:

             a horizontal brace member,

5 first and second implement brackets attached to the brace member, said first and second implement brackets each formed of an inner plate and an outer plate, said inner and outer plates of the first and second implement brackets having aligned bracket apertures,

10 a first guide plate attached at an angle to an upper end of the inner plate of the first implement bracket, and a second guide plate attached at an angle to an upper end of the inner plate of the second implement bracket,

wherein said first and second implement brackets sized to releasably receive the first and second extension members of the box scraper.

15 14. The box scraper assembly as recited in Claim 13, wherein the tractor implement further includes a second attachment means for releasably attaching the first and second extension members of the box scraper to the first and second implement brackets of the tractor implement.

20 15. The box scraper assembly as recited in Claim 14, wherein the second attachment means is connecting pins.

16. The box scraper assembly as recited in Claim 13, wherein the first and second guide plates are angled inwardly.

25 17. A method for connecting a box scraper assembly with self-guiding hitch system to a tractor implement, the assembly further includes a self-guiding hitch system which enables the connection of a variety of tractor implements, said box scraper assembly including

30 a frame having two spaced opposing end sides, and a back side extending between the end sides,

a tool attachment having at least one arm, said arm having a first end and a second end opposite the first end,

5           a hydraulic lift having a hydraulic ram, wherein one end of the hydraulic lift is attached to the frame, and the hydraulic ram opposite the one end is pivotally attached to the first end of the arm of the tool attachment,

          a horizontal bar attached to the second end of the arm,

          at least one tool member attached to a side of the horizontal bar,

10           a rake member positioned forward of said back side between the end sides of the box scraper, and

          pivot means attached to the rake member for pivoting the rake member;

          wherein the hitch system including

          first and second upwardly extending arms having upper and lower ends, wherein  
15           the lower ends are attached to the support member of the box scraper, and the upper ends upwardly extend from the support member forming an upper bracket for connecting with the tractor's three- point hitch,

          a first scraper bracket formed of the lower end of the first extending arm and a first plate attached to the support member parallel with the lower end of the first  
20           extending arm, and a second scraper bracket formed of the lower end of the second extending arm and a second plate attached to the support member parallel with the lower end of the second extending arm,

          a first attachment means for releasably attaching the tractor's three- point hitch to the first and second scraper brackets,

25           a first extension member that downwardly depends from the first plate, and a second extension member that downwardly extends from the second plate, wherein the extension members include an extension aperture, and

          a stop block attached at an angle to the outer surface of the extension members;

          wherein the tractor implement including

30           a horizontal brace member,

          first and second implement brackets attached to the brace member, said first and second implement brackets each formed of an inner plate and an outer plate, said inner and outer plates of the first and second implement brackets having aligned bracket apertures,

a first guide plate attached at an angle to an upper end of the inner plate of the first implement bracket, and a second guide plate attached at an angle to an upper end of the inner plate of the second implement bracket,

wherein said first and second implement brackets sized to releasably receive the first and second extension members of the box scraper,

a second attachment means for releasably attaching the first and second extension members of the box scraper to the first and second implement brackets of the tractor implement;

said method comprising the steps of:

mounting the box scraper to a three- point hitch at the rear of a tractor,

positioning the tractor implement on the ground,

raising the three- point hitch so that the box scraper is elevated a distance above the ground which is greater than the height of the first and second implement brackets of the tractor implement,

positioning the box scraper above the tractor implement so that the first and second extension members are directly above the first and second implement brackets,

lowering the box scraper so that the first extension member is received within the first implement bracket and the second extension member is received within the second implement bracket,

securing the extension members to the implement brackets with connecting pins.